

IT Governance Disclosure of *Web100* Companies

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Abstract

Arising from the recent focus on corporate accountability and IT governance, this study investigated the promotional advantage perceived by large US corporations in making transparent some of their approaches to IT governance. Content analysis techniques were used to analyse the websites of 42 corporations for references to IT governance, using an IT control framework. The corporations appeared to see little advantage in disclosing IT governance issues. However, those corporations acknowledged as corporate governance exemplars had higher levels of disclosure on IT governance.

Keywords: corporate governance, IT governance, IT evaluation, Sarbanes-Oxley Act, regulatory compliance, promotional advantage

1. Introduction

The failure of major corporations including WorldCom, Global Crossing and Enron has contributed to an increased focus on corporate accountability, which may lead to the most important changes in corporate governance since the 1930s (Weidenbaum 2002). As a consequence, measures to increase corporate accountability have been introduced in many nations.

The United States of America (US) introduced the Sarbanes-Oxley Act in 2002 and related US Securities and Exchange Commission (SEC) regulations, which imposed new corporate governance requirements (McGowan & Brisendine 2003). The Sarbanes-Oxley Act was designed to protect investors through improving both the accuracy and reliability of corporate disclosures made in relation to the securities laws, as well as in other ways (Kulzick 2004). The Act affected many parties and considered a wide range of provisions (Kulzick 2004), including auditor independence, corporate responsibility, financial disclosure, analyst conflicts of interest, corporate and criminal fraud accountability, and white-collar crime penalties (Kulzick 2004). The impact of many of the provisions of the Sarbanes-Oxley Act is still unclear however, due to different implementation deadlines for various provisions of the Act, and a need for rule-making, interpretation and implementation.

The Sarbanes-Oxley Act applies not only to US domestic public companies, banks and savings associations and other companies, but also to foreign public companies that trade on a US exchange (Coppin 2003; Kulzick 2004). Because of the influence of the US on the world economy, the Sarbanes-Oxley Act is likely to be far-reaching, impacting on many aspects of corporate governance both within and outside the US.

GovernanceMetrics International (GMI), an organisation that undertakes research in corporate governance, investigated the link between corporate governance ratings and corporate performance to find a correlation over a three, five and ten year period (GMI 2004). A correlation was also found between total company returns and financial disclosure and internal controls (GMI 2004). When 2100 companies were scored from 1.0 to 10.0 for corporate governance, 22 of the companies evaluated received a score of 10.0, of which 18 were from the US. However, the GMI research focused on corporate governance, without investigating specifically the role of Information Technology (IT) in corporate governance.

2. Background

The background that follows discusses IT governance, which is a subset of corporate governance, before presenting information on the Sarbanes-Oxley Act and internal controls, and then the study aims. Although the Sarbanes-Oxley Act was introduced to achieve better corporate governance, it is connected to IT governance through internal controls.

2.1 IT Governance

As corporate governance deals with the mechanisms that determine the allocation of resources and returns in a corporation, and the control of resources (Groenewegen 2004), it covers a broad range of issues, and impacts on investment decisions in many areas of a corporation.

Business processes increasingly require Information Technology (IT) (Capozzi & Singleton 2002; Guldentops 2001), so that corporations have experienced an increase in their dependency on IT to achieve their goals and competitive position (Hawkins et al. 2003; Rao 2003; Van Grembergen & Van Bruggen 2003). However, IT is accompanied by its own problems that bring considerable uncertainty and risk (Beaumaster 2002). Consequently, organisations are being called upon to account for their expenditure on IT, evaluate its use and achieve its full potential to benefit the organisation (Ward & Peppard 2002).

A new corporate governance model has emerged, with an increased emphasis on IT governance. IT governance consists of the leadership, organisational structures and processes that ensure that an organisation's IT sustains and extends its strategies and objectives (Guldentops 2001; IT Governance Institute 2001; McKay & Marshall 2003). It has been claimed that an organisation needs to provide an equivalent level of commitment to IT governance as it allocates to corporate governance, in order to achieve corporate success (Rao 2003). IT governance has become a critical success factor in the achievement of corporate success, by deploying information through the application of technology (Korac-Kakabadse & Kakabadse, 2001).

The importance of IT governance is acknowledged in the Gartner Group's finding that large organisations spend in excess of 50% of their capital investment on IT (Koch 2002), while IT is recognized as "...an essential component and contributor to financial governance" (Chan 2004, pp. 31). An understanding has emerged that the most important IT issues for the near future in the private and public sector are not technology-related, but governance-related (Guldentops 2002). If this is true, then IT governance evaluation is a critical aspect of IT evaluation.

To reduce failure and disappointment caused by inappropriate IT activity, and to improve the performance of IT, effective IT governance needs to be implemented in an organisation. The reason that IT governance is important is because reality and the expectations of IT often do not match (Guldentops 2001). Consequently, the topic *Improving IT Governance* appeared for the first time in Gartner's Top Ten Chief Information Officer (CIO) 2003 Management Priorities when it was ranked third (De Haes & Van Grembergen 2004), an outcome that acknowledged the recent level of concern of senior managers for IT governance. Again, the importance of evaluating IT governance can be seen.

IT governance seeks to provide transparent control for the internal and external audit of IT procedures (IT Governance Institute 2000), where control is:

The policies, procedures, practices and organisational structures designed to provide reasonable assurance that business objectives will be achieved and that undesired events will be prevented, or detected and corrected (IT Governance Institute 2000, p.10).

2.2 Sarbanes-Oxley Act and Internal Controls

Even though the Sarbanes-Oxley Act is essentially financial legislation (Kubilus 2003), as IT is likely to be used as part of a company's financial business processes, IT controls will be incorporated into its internal controls. Internal control is critical for the achievement of financial transparency (Kulzick 2004) as internal controls facilitate the evaluation of important aspects of a corporation. Therefore, Sarbanes-Oxley compliance is likely to require a strengthening of IT internal controls within an organisation (Kubilus 2003). The Sarbanes-Oxley Act requires the documentation and evaluation of corporate internal controls to be implemented by late 2004. As a result, the Act has created an increased need for corporate IT controls in order to meet the directives of Section 404, which deals with the Management Assessment of Internal Controls (Congress of the USA 2002). Because it can be seen that "...the accuracy and timeliness of financial reporting is, at most companies, heavily dependent on a well-controlled IT environment" (IT Governance Institute 2000), the evaluation of IT governance is important to investors and other corporate stakeholders.

To comply with the Sarbanes Oxley Act, companies must lodge quarterly, semi-annual and annual reports that include statements about internal controls (Kulzick 2004). These reports are commonly referred to as "SEC listings". Statements in corporate reports required by the Sarbanes-Oxley Act must acknowledge management's responsibility to maintain adequate internal controls, to give an evaluation of their effectiveness, and to disclose the framework used to assess the effectiveness of internal controls (Kulzick 2004). The corporation's audit firm must also verify management's statements (Kulzick 2004), after reviewing the internal controls.

IT control frameworks are designed to promote effective IT governance (Ridley *et al.* 2004). COBIT is a well known IT control framework, which defines 34 IT processes categorised by function into the following four IT domains: *Planning and Organisation*, *Acquisition and Implementation*, *Delivery and Support*, and *Monitoring*. As the four domains cover "all aspects of information and the technology that supports it" (Lainhart 2001), COBIT is a useful instrument to evaluate whether all aspects of IT governance have been reported. The 34 IT processes have been set out below in Table 1, grouped into the four domains.

Table 1 COBIT's Set of IT Processes, Grouped into Four Domains

PO1 Define a strategic plan	DS1 Define and manage service levels
PO2 Define the information architecture	DS2 Manage third-party services
PO3 Determine technological direction	DS3 Manage performance and capacity
PO4 Determine the IT organisation and relationships	DS4 Ensure continuous service
PO5 Manage the IT investment	DS5 Ensure systems security
PO6 Communicate management aims and direction	DS6 Identify and allocate costs
PO7 Manage human resources	DS7 Educate and train users
PO8 Ensure compliance with external requirements	DS8 Assist and advise customers
PO9 Assess risks	DS9 Manage the configuration
PO10 Manage projects	DS10 Manage problems and incidents
PO11 Manage quality	DS11 Manage data
AI1 Identify automated solutions	DS12 Manage facilities
AI2 Acquire and maintain application software	DS13 Manage operations
AI3 Acquire and maintain technology infrastructure	M1 Monitor the processes
AI4 Develop and maintain procedures	M2 Assess internal control adequacy
AI5 Install and accredit systems	M3 Obtain independent assurance
AI6 Manage changes	M4 Provide for independent audit

PO: *Planning & Organisation*; AI: *Acquisition & Implementation*; DS: *Delivery & Support*; M: *Monitoring* (IT Governance Institute 2000)

2.3 Aims of this Study

Beyond the need to attend to mandatory compliance, there are at least two additional reasons to motivate companies to pay attention to corporate governance. The first is the benefit to be derived from implementing effective corporate governance. The second is the advantage of being seen to operate in this way. Given the reporting requirements of the Sarbanes-Oxley Act and the concern for corporate accountability by government, the public and corporate shareholders, this study therefore assumed that the largest US corporations would document their policies and procedures regarding corporate governance in a medium readily accessed by the public and stakeholders, to attest to their compliance. As the internet has become an important promotional tool for organisations, it was also assumed that the same corporations would use the internet to document their corporate governance policies and procedures.

It has been demonstrated that not only does IT play a critical role in organisations, it will also play an important role in complying with Section 404 of the Sarbanes-Oxley Act and the achievement of financial transparency. Consequently, due to the importance of IT governance for effective corporate governance, the attention paid to corporate governance, and the need to comply with Section 404 of the Act, it was conjectured that the largest US-based companies will report on IT governance-related issues for promotional purposes.

A distinction must be drawn between the deployment of IT governance mechanisms within corporations, and corporate disclosure to the public regarding IT governance. It is probable that the sophisticated use of IT likely to be deployed by the largest US corporations will be matched by a comparable sophistication in their IT governance policies and procedures. Clearly there may be disadvantage associated with some disclosures regarding IT governance, particularly where a corporation's competitive position could be eroded. An evaluation of the level of IT governance used within the corporations is outside the scope of this study.

The first aim of this study was to assess the level of promotional advantage perceived to be derived by the 50 largest US-based companies in disclosing to the public the attention they give to IT governance, as judged from documents placed on their websites. As many large

corporations have a policy on gaining authority to make corporate information available on their websites, it was assumed that material available on the websites was released intentionally, rather than unintentionally, and would reflect the views of senior management. The second aim of the study was to investigate whether those companies considered as exemplars for corporate governance made greater public disclosure of IT governance practices.

The purpose of undertaking the study was to determine whether the perceived value of disclosing corporate governance information was matched by the perceived value of disclosing IT governance information, as IT governance is critical for effective corporate governance. Little disclosure of IT governance in comparison to that of corporate governance may indicate that the companies perceived that the disadvantages of disclosing possibly sensitive information on IT governance outweighed the promotional advantages. Moreover, without public disclosure of approaches to IT governance, corporate stakeholders will not be able to evaluate the degree of risk arising from IT governance procedures, which may have negative consequences. Another purpose was to facilitate future comparisons using baseline data collected in this investigation. It is argued that a perception by corporations that disclosure of IT governance is advantageous will act to drive increased disclosure, enabling stakeholders to better evaluate the effectiveness of IT governance within an organisation.

3. Methodology

A content analysis method was used by two researchers trained in Information Systems (IS) research methods, to analyse the websites of the 50 largest US-based companies that appeared in the list *Web100*, by categorising references to IT governance in their webpages. GMI offered a precedent for reviewing corporate websites to evaluate corporate governance, as it gathered some of the data used for its rankings from websites.

Web100 (2004) ranks the 100 largest companies with an internet presence, according to their revenue. A version of *Web100*, the *USWeb100*, lists US-based corporations along with their Fortune 500 and Global 500 ranks. As the *USWeb100* ranks coincide exactly with both the Fortune 500 and Global 500 ranks, this strengthens the credibility of the *USWeb100* list, which claims to be the "...most comprehensive index to the Web sites of ...the world's largest businesses" (*Web100* 2004).

USWeb100 was used rather than *GlobalWeb100*, a version of *Web100* that lists non-US listed companies, as the largest US corporations were considered likely to be responsive to pressures for corporate accountability, including the need to comply with the Sarbanes-Oxley Act. As there would be some variation in the pressures for corporate accountability acting upon the global corporations as a consequence of different national legislation, it would have been more difficult to control the variation in an evaluation of their websites.

Reference to any aspect of COBIT's 34 IT processes on a corporate website was regarded as a reference to IT governance, as COBIT is acknowledged as a comprehensive IT governance and control framework (Fox 2004). The 50 websites of the corporations were evaluated for IT governance issues over a two-week period in June–July, 2004, a task that took approximately 35 hours. The names of corporations searched can be seen in Attachment 1. Each site was accessed using the universal resource locator (url) that appeared in the online *USWeb100* list. The website was browsed for the following references or sections:

- Corporate governance
- IT governance
- Other aspects of IT
- 2003 annual report
- SEC listings

Where the corporations operated within an IT-related industry, it was necessary to distinguish between IT products and services marketed to customers, and those deployed within the corporation itself.

Where a search facility existed on the website, searches were undertaken for the following terms:

- IT governance
- Section 404 (of the Sarbanes-Oxley Act)
- SEC listings
- 2003 annual report

Each relevant section or passage was read, looking for references to any element of IT governance, as set out in COBIT's 34 IT processes. A record of the references was kept in a spreadsheet. Analysis was then undertaken based on the spreadsheet entries, and included both a descriptive analysis of frequencies, and classification of the data into COBIT's four domains.

To establish inter-coder reliability, a third researcher, also trained in IS research methods, classified a random selection of the sites independently. An acceptable level of intercoder reliability was assumed to exist where 70% agreement or more was achieved between the categories of each researcher.

A comparison was also made between the number of references to IT governance in the corporations that were ranked in the top 50 *USWeb100* companies, and the US companies from the GMI ranking with the highest possible corporate governance score of 10.0. The GMI ranking was calculated from publicly available information, just as the data for the current investigation was obtained from websites freely-accessed by the public. The aim of this activity was to gain an indication of whether the corporations with the highest corporate governance ranking also paid more attention to IT governance disclosure.

4. Results and Discussion

Four of the corporation websites could not be accessed at the time the data were collected. The website of Walmart Stores Incorporated was temporarily closed, while that for Amoco Corporation, Morgan Stanley Dean Witter, Discover and Company and ConAgra Incorporated could not be located using the *USWeb100* url. Of the remaining 46 websites accessed, 42 represented separate corporations, while four had merged with one of the 42.

As the names of the corporations in the *USWeb100* list did not reflect some recent mergers, it was apparent that the list was not current. No date for the last update was provided on the *Web100* site. However, this limitation was considered to be minor, as the urls pointed to

websites that were kept current by the corporations and not *Web100*. Furthermore, the exact ranking of each corporation was not of consequence to this study, as it aimed to evaluate the degree of IT governance disclosure of leading US corporations with an internet presence.

4.1 References to IT Governance Issues in Websites

Table 2 sets out the results of searching the 42 websites for IT governance related issues. The intercoder reliability was found to be 74% and was therefore acceptable.

Table 2 Number of References to IT Governance Issues in Websites of 50 Highest Ranked Corporations listed on *USWeb100*, June–July 2004

Inclusions	Frequencies		Total
	Yes	No	
Corporate governance	35 (83%)	7 (17%)	42
Section on IT governance	8 (19%)	*34 (81%)	42
Other aspects of IT (other than products or services)	2 (5%)	40 (95%)	42
Section 404 of the Sarbanes-Oxley Act	2 (5%)	**40 (95%)	42
IT governance issues in 2003 annual report	9 (23%)	31 (78%)	40
SEC listings	35 (83%)	7 (17%)	42
Contains reference to IT governance issues anywhere on site	26 (62%)	16 (38%)	42

N=42

* excluded 359 000 hits for International Business Machines that appeared to relate to its tools, products & services

** excluded 187 000 hits for International Business Machines that appeared to relate to its tools, products & services

(Note: one total exceeds 100% due to rounding error)

As the websites of three corporations had limited or no search facilities, a limitation of the study was that a negative response was recorded if the issue was not found on the websites by browsing. Because two corporations did not have their 2003 annual reports available online, the total for corporation annual reports was reduced to 40. The vast number of hits found when searching the International Business Machine (IBM)'s website for "IT governance" and "Section 404" of the Sarbanes-Oxley Act was assumed to relate to the tools, products and services marketed by the corporation and so were excluded from the frequencies, based on a sampling of the hits.

Table 2 indicates that the majority of the 42 corporation websites (83%) included a section on corporate governance, while the same proportion made available the SEC returns through the websites. However, only a very small to small minority (5–23%) included information on one or more of IT (other than products or services), IT governance, Section 404 of the Sarbanes-Oxley Act or IT governance issues in the 2003 annual report, where accessed. A total of 62% of the websites contained some reference to IT governance issues, while 38% did not.

4.2 IT Governance References, Categorised into COBIT Domains

Table 3 sets out a summary of all references to IT governance in the websites of the corporations, categorised into the four domains from COBIT. Some websites made multiple references to IT governance, while others made none.

A total of 49 references to IT governance were found in the 42 websites that could be accessed and searched from the leading 50 Web100 corporations, or approximately 1.17 references per website. The number of references to IT governance ranged from 0 to 4 per website. However, the nature of the references varied greatly from those that extended over multiple pages to brief mentions. When it is considered that any one of 34 distinct IT

processes were sought in the analysis, while many of the websites were extensive, the mean number of references per website was minimal. Furthermore, often a considerable quantity of information on corporate governance was available on the websites. The total number of references suggests that the leading US corporations saw little promotional advantage in disclosing their approach to IT governance, but saw much more value in disclosing corporate governance information.

Table 3 Total Number of References to IT Governance in 50 Web100 Highest Ranked US Corporation Websites, Ranked by Revenue, Categorised by Domain (after COBIT)

IT Governance Domain	Planning & Organisation	Acquisition & Implementation	Delivery & Support	Monitoring	Total References
Frequency of References	21 (43%)	8 (16%)	2 (4%)	18 (37%)	49 (100%)

N=42

It can be seen that two of the IT governance domains, *Planning and Organisation*, and *Monitoring*, together accounted for close to 80% of the references to IT governance in the websites of the corporations. In contrast, the remaining domains, *Acquisition and Implementation* and *Delivery and Support* represented a little over 20% of the references. Of the two last-named domains, *Delivery and Support* was by far the least reported. Examples of references within each of the four domains are provided below.

Many of the references within the *Planning and Implementation* domain were intended to communicate high-level management aims and directions. For example, in its “Business Conduct Guidelines”, IBM set out some of its broad policies relating to use of systems and information.

References to IT governance that were categorised as belonging to the *Acquisition and Implementation* domain were infrequent. An example included AT&T Corporation’s references in the 2003 Annual Report to infrastructure developments and their links to business goals.

Only two references to *Delivery and Support* were found in the websites. One of these references was a 25 page technical report from Hewlett-Packard Company entitled “IT Service Management and IT Governance: Review, Comparative Analysis and Their Impact on Utility Computing”.

Most references to *Monitoring* on the websites mentioned internal controls, such as one from Motorola Incorporated that referred to the need to review the “...adequacy and effectiveness of...(the) computerized information system controls and security...”.

It is possible that information on IT *Acquisitions and Implementations*, and *Delivery and Support*, may be more commercially sensitive than the high level management aims and directions that were presented in *Planning and Implementation*. The degree of sensitivity may well have influenced the choice of information on IT governance to be disclosed. The references to internal controls in the *Monitoring* domain may relate more to satisfying corporate governance requirements, rather than be designed for promotion. However, because of the nature of the material, it seems likely that the relatively limited information made available on *Planning and Implementation* and *Monitoring* of IT governance would have been placed on the corporate websites, driven by a desire for promotional advantage.

4.3 IT Governance Transparency in Exemplar Corporations

Six corporations with the highest possible GMI score also appeared amongst the 42 leading *Web100* companies. These corporations were: E.I DuPont de Nemours and Company, Exxon Mobil Corporation, General Electric Company, General Motors Corporation, Intel Corporation and PepsiCo Incorporated. The mean number of references to IT governance for all of the 42 websites was 1.17. However, for the US companies listed by GMI as having the highest score possible for corporate governance that also appeared in the top 50 *Web100*, the mean number of references to IT governance was 1.83.

Consequently, the investigation found that the corporations with the highest corporate governance ranking also paid more attention to disclosure of their IT governance approaches. It is possible that these corporations already understood the promotional advantage of making transparent their corporate governance strategies, a policy they extended to IT governance.

5. Conclusions

Of the 42 *Web100* websites accessed and searched, the great majority included a section on corporate governance and made available SEC listings. As the Sarbanes-Oxley Act mandates transparency in many aspects of corporate governance including the lodgement of SEC returns, and websites are viewed as a useful corporate promotional tool, it is difficult to separate corporate motivation to comply with regulation and legislation from the desire for promotional advantage in relation to corporate governance.

However, as there is no requirement for US listed corporations to disclose information on IT governance, apart from that relating to financial internal controls, only the desire for promotional advantage appears to drive disclosure of IT governance issues. The results of this study suggest that the largest US corporations were little motivated by a perceived promotional advantage in making IT governance issues transparent to stakeholders and the public. Moreover, the type of IT governance information that is available on the websites of the largest US corporations may point to a perceived disadvantage in disclosing some types of IT governance information, due to its sensitive nature.

If the largest US corporations are reluctant to disclose IT governance information on their websites, despite the considerable resources at their disposal and widespread pressures on them for corporate transparency, it seems unlikely that smaller companies and those from outside the US would also be motivated to make similar disclosures. Without public disclosure about IT governance, corporate stakeholders will find it hard to evaluate the quality of IT governance in a corporation, which carries risk. However, as corporate governance disclosure is increasing, and even greater corporate emphasis on IT is expected in the future than there is at present, it seems possible that an increased transparency of IT governance will be seen in future years. If this occurs however, as IT continues to be used in strategic ways to improve the competitive position of an organization, the tension between the advantage and disadvantage of disclosing IT governance information will need to be carefully managed. It is likely that this tension will be dealt with by restricting the transparency of information available in the *Acquisition and Implementation* and *Delivery and Support* domains, while revealing information within the *Planning and Implementation* and *Monitoring* domains, as foreshadowed by the findings of this study.

Although the US Web100 listing of corporations was found to be out of date, this limitation was considered to have minimal impact on the conclusions. Future longitudinal research will enable any changes in disclosure regarding IT governance to be tracked, particularly as further clarification is obtained on Section 404 and other aspects of the Sarbanes-Oxley Act.

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Attachment 1

List of 42 corporations accessed and searched from US*Web*100.

1. General Motors Corporation	17. St. Paul Travelers	33. Fannie Mae
2. Ford Motor Company	18. Prudential Insurance Company of America	34. Dayton Hudson Corporation
3. Exxon Corporation	20. The Procter & Gamble Company	35. Morgan Stanley Dean Witter, Discover & Corporation
5. General Electric Company	21. Citicorp	36. The Kroger Company
6. International Business Machines	23. Kmart Corporation	37. Lucent Technologies Incorporated
7. Chrysler Corporation	24. Merrill Lynch & Company Incorporated	38. Intel Corporation
9. Philip Morris Companies Incorporated	25. JC Penney Company Incorporated	39. The Allstate Corporation
10. AT&T Corporation	26. American International Group Incorporated	40. SBC Communications Incorporated
11. The Boeing Corporation	27. Chase Manhattan Corporation	43. Metropolitan Life Insurance Company
12. Chevron Texaco Incorporated	28. Bell Atlantic Corporation	44. The Home Depot Incorporated
13. State Farm Insurance Companies	29. Motorola Incorporated	46. Merck & Company Limited
14. Hewlett-Packard Company	30. Teachers Insurance & Annuity Assoc./College Retirement Equities Fund	47. Bank of America
15. El du Pont de Neumours & Company Limited	31. PepsiCo Incorporated	49. Johnson & Johnson
16. Sears, Roebuck & Company	32. Lockheed Martin Corporation	50. Safeway Incorporated

Note that only the corporations with websites that could be accessed have been included; the smaller of two companies within the leading 50 where mergers had occurred since publication of Web100 have been omitted.